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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

AWAD, AMR A

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 09/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/722,996

Applicant(s)

SUN, JIMING

Examiner

Amr Awad

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8, 10-11, 13-22, 24-25, 27-28 and 30 are rejected under 35

U.S.C. 102(b) as being anticipated by Eng et al. (US Patent NO. 5,638,092).

As to independent claim 1, Eng (figure 1) teaches a pointing device (100) which includes a ring (101), a sensor unit comprising a plurality of sensors in substantially circular pattern and mounted on the ring (for that, Eng (figure 11) shows another embodiment of the transmitter circuit 204 shown in figure 2a in substantially circular pattern and wherein a plurality of sensors 254, 255 and 256 are mounted on the ring) (col. 3, lines 46-50 and col. 17, lines 22-43).

As to claim 2, as can be seen in figure 1, the ring (101) is a size that is capable of being worn by a human digit.

As to claims 3-4, Eng shows in figure 11 that a click buttons (252 & 253) are mounted on the ring, and since the ring is paced in the index finger, having the buttons being clicked by the thumb is inherent (col. 17, lines 28-43).

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As to claim 5, as can be seen in figure 11, Eng shows the sensors 254, 255 and 256 mounted on the ring, and since the ring is paced in the index finger, having the sensors being activated by the thumb is inherent (col. 17, lines 28-43).

As to claim 6, as can be seen in figures 2a-2c and 11, Eng shows a controller (257) and transmitter (250) (col. 17, lines 22-43).

As to claim 7, as can be seen in figure 1, Eng shows that the movement of the user's finger (121 & 122) being detected to show the position regarding a pointer on a display (col. 3, lines 64-67 and col. 11, lines 46-64).

As to claims 8 and 10-11, Eng shows that the sensors are pressure sensors, which may be either inductance or capacitance (col. 4, lines 41-56 and col. 5, lines 29-33).

Claims 13-22, 24-25, 27-28 and 30 are substantially similar to claims 1-8 and 10-12. Independent claim 13 and its depended claims are a method corresponds to apparatus of claims 1-8 and 10-12. Claims 18-22 and 24-25 are computer system corresponds to the apparatus of claims 1-8 and 10-12, and as can be seen in Eng's device, the operation of the device is carried out by a software program (figures 8a and 8b which show a flowchart of computer program). Similarly claims 27-28 and 30 are a program produce similar to the program product shown by Eng.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9, 12, 23, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eng in view of Russell (US patent NO. 5,481,265).

As to claims 9 and 23, Eng does not teach that the plurality of sensors are rocker switches (note that Eng teaches that a touch sensitive pad is preferred to a mechanical switch because of the force required to activate or deactivate a mechanical switch can cause unwanted finger motion (col. 5, lines 30-33) which clearly suggests that a mechanical switches can be used.

However, Russell (figures 1A, 1B and 7B) teaches a user interface (10) that can be worn in the user's finger, and wherein the device includes a plurality of mechanical switches (1a, 1b, 1c and 1d) (col. 11, lines 7-27, and 51-61).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Russell having mechanical switches to replace Eng's touch switches, because as described above by Eng, mechanical switches may be used, which make such choice purely designed choice based on the environment and the way in which the device operated.

As to claims 12, 26 and 29, Eng does not expressly teach using infrared to transmit the information.

However, Russell teaches a pointing device which uses infrared to transmit the information to the computer device (col. 6, lines 41-44).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Russell using an infrared transmitter to be used in Eng's transmitter because infrared technology is known for its reliability and efficiency. Furthermore, Russell teaches that transmitter can be any of the known technologies (infrared, radio and acoustic). Therefore, using any of these methods is also based on the designer choice.

Response to Arguments

5. Applicant's arguments filed June 27, 2003 have been fully considered but they are not persuasive.

Applicant (paragraph 4 of page 6) argued that the Office Action did not make a prima facie case of anticipation because Eng does not teach each and every claim element. Examiner respectfully disagrees. As discussed in the rejection above, Eng teaches all the limitations of claims 1-8, 10-11, 13-22, 24-25, 27-28 and 30, considering using the broadest reasonable interpretations to these claims.

Applicant (last paragraph of page 7) argued that Eng does not teach, "a sensor unit comprising a plurality of sensors in a substantially circular pattern", because Eng's touch sensors are discrete units, while claim 1 calls for a sensor unit with a plurality of sensors, and that Eng teaches a linear array of three touch sensors (254,255 and 256). examiner respectfully disagrees. The fact that Eng teaches a discrete sensors unit does not mean that it is different from the recitation of claim 1 having a sensor unit with a plurality of sensor. Using the broadest reasonable interpretation, the limitation simply

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means having a plurality of sensors (similar to the sensors taught by Eng), and the plurality of sensors is titled as "a sensor" because each sensor of the plurality of sensors is performing sensing functions. Claim 1 is calling for a plurality of sensors in substantially circular pattern". This can be fairly and broadly interpreted as having the sensors located on circular pattern. Having the sensors (254, 255 and 256) located on the on the circular ring body (201) in the transmitter are (204), as discussed in the rejection above, would fairly conclude that the sensors are in substantially circular pattern. Furthermore, the term "circular pattern" according to the American Heritage Dictionary (third edition) simply means "of or relating to a circle". Using this meaning and compare it to the device of Eng, we can see that the transmitter (204) in where the sensors (254, 255 and 256) are located, has a circular pattern because it is relating to a circle (the ring body (201)). Therefore, it is fair to conclude that the sensors located in the transmitter have circular pattern (i.e., relating to a circle). Examiner therefore, believes that having the sensors located in the transmitter (204) which is part of a circle, would fairly read on having the sensors having substantially circular patter as recited in claim 1.

Applicant (middle of page 8) argued that claim 13 includes limitations different from limitations recited in claim 1, because claim 13 recites, "detecting activation of one of a plurality of sensors arranged in a substantially on a sensor unit". Examiner respectfully submitted that this limitation is similar to the recitation in claim 1 "sensor comprising a plurality of sensors in a substantially circular pattern". Detecting the activation is inherent in the device because, when the sensor is activated or touched in

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Eng's device, it will be detected. The argument of Eng having a linear array of three touch sensors and not having a sensors arranged in a substantially circular pattern has been addressed above. With respect to the argument with respect to claim 18 (bottom of page 8), the claim includes the same limitation cited in claim 1. Claim 27, includes the same limitation argued with respect to claim 8 above.

Applicant (bottom half of page 10) argued that the Office Action did not make out a prima facie case of obviousness because the combination of Eng and Russell does not teach or suggest a plurality of sensors arranged in substantially circular pattern. Examiner respectfully submits that such argument has been addressed above with respect to all the independent claims of the present application. Applicant (first paragraph of page 11) argued that Eng teaches away from the cited combination because Russell describes a user interface apparatus including mechanical switches, while Eng indicates that mechanical switches can cause unwanted finger motion, which makes a person of ordinary skill in the art discouraged from combining the teaching of Eng with the teaching of Russell. Examiner respectfully disagrees. Russell was cited not to replace the touch pad of Eng, but rather to show other limitations, which are not taught by Eng. for example, in claims 9 and 23, Russell was cited to show a plurality of sensors being a rocker switches. As indicated by the Applicant and in the Office Action above, Eng shows that touch sensitive replaces the mechanical switches, which means that mechanical switches can replace the touch pad and vice versa. In claims 12, 26 and 29 Russell was cited to show that infrared can be used to transmit the information.

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Therefore, Examiner firmly believes that the combination of Eng and Russell fairly suggests the claimed limitations as claimed in dependent claims 9, 12, 23, 26 and 29.

Applicant (top of page 13) argued that he does not admit that references cited under USC 102(a), 102(e), 103/102(a), or 103/102(e) are prior art. It is respectfully submitted by the Examiner that all the references used (Eng and Russell) are either 102(b) or 103/102(b) references.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703)308-8485. The examiner can normally be reached on Monday-Friday, between 9:00AM to 5:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras can be reached on (703)305-9720. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4750.

A handwritten signature in black ink, appearing to read "Amr Ahmed" followed by a stylized flourish.

A.A.

September 10, 2003